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AMSAT NEWS SERVICE
ANS-005

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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ANS-005 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 005.01
 From AMSAT HQ SILVER SPRING, MD.
January 5, 2013
To All RADIO AMATEURS
BID: $ANS-005.01

NASA Digital Learning Network Special Opportunity

Special Opportunity
Would you like to have your class participate in an interactive webcast with an astronaut? NASA invites students and teachers to an inside look at America's Spaceport at 2:30pm ET on January 31st. Four schools (target audience grades 5-9) will have the special opportunity to connect directly and ask questions of astronaut and Director of NASA's Kennedy Space Center Bob Cabana. Learn about his education and training, living and working in space, and the future of space exploration. All other schools may participate by watching the web stream athttp://dln.nasa.gov. Email rachel.b.power(a)nasa.gov for more information.

[ANS thanks NASA for the above announcement]

Winter Issue of AMSAT-UK OSCAR News Available

E-members of AMSAT-UK can now download the PDF of the Winter edition of the OSCAR News magazine here (as well as previous 2013 and 2012 issues).

The paper edition should be posted to members soon.

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• FUNcube-1 Operations Report
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The AMSAT-UK Membership year lasts for 12 months starting on January 1 each year.

Membership of AMSAT-UK is open to anyone who has an interest in amateur radio satellites or space activities, including the International Space Station (ISS).

E-members of AMSAT-UK are able to download OSCAR News as a convenient PDF that can be read on laptops, tablets or smartphones anytime, anyplace, anywhere. Join as an E-member at Electronic (PDF) E-membership

There are two rates for the paper edition to cover the extra postage costs:
UK
Rest of the World (Overseas)

[ANS thanks AMSAT-UK for the above announcement]

Hillbilly Tracking for Low Earth Orbit Satellites

In a video, Travis Goodspeed KK4VCZ describes his Low Earth Orbit (LEO) satellite tracking system to the 30th Chaos Computer Congress which took place December 27-30, 2013 at the Congress Center Hamburg in Germany.

The YouTube description reads:

Satellites in Low Earth Orbit have tons of nifty signals, but they move quickly though the sky and are difficult to track with fine accuracy. This lecture describes a remotely operable satellite tracking system that the author built from a Navy-surplus Inmarsat dish in Southern Appalachia.

The entire system is controlled through a Postgres database, fed by various daemons spread across multiple machines. So when I click on a satellite on my laptop or cellphone, it runs “UPDATE target SET name=’Voyager 1?;” and the motor daemon then begins to track the new target while the prediction daemon maintains accurate estimates of its position in the sky.

Additional daemons take spectral prints or software-defined radio recordings of the targeted object for later review.

There is a description of the system on Travis Goodspeed’s Blog at http://travisgoodspeed.blogspot.co.uk/

Other 30c3 videos available at http://www.youtube.com/user/albertveli/videos

30th Chaos Computer Congress https://events.ccc.de/congress/2013/wiki/Main_Page

[ANS thanks AMSAT-UK for the above announcement]

High Resolution Data available on FUNcube Data Warehouse

As promised, we are making the FUNcube-1 (AO-73) CubeSat High Resolution Data available for download from the Data Warehouse.

It contains Hi-Res data generated every hour, on the hour for the 60 minutes preceding the extract.

Please note that unlike the Whole Orbit Data, the Hi-Res data may be incomplete (have significant gaps) because of a lack of ground stations on the ground track.

Now that we have the WOD and Hi-Res extracts working, we are going to move on to the RealTime extract.

Please provide any feedback on the FUNcube forum.

73 and Happy New Year,

Dave, G4DPZ

FUNcube-1 High Resolution Data https://warehouse.funcube.org.uk/highres.html?satelliteId=2

Data Warehouse – Telemetry Archive https://warehouse.funcube.org.uk/

Dashboard App – Telemetry Decoder http://funcube.org.uk/working-documents/funcube-telemetry-dashboard/

[ANS thanks AMSAT-UK for the above announcement]

Call for Papers for the AMSAT-SA Space Symposium

SA AMSAT has announced that its annual Space Communication symposium will be held on Saturday 24 May 2014 at the Innovation Hub in Pretoria. Proposals for papers are now called for. Submit a brief overview of the planned paper by 15 March 2014 to saamsat(a)intekom.co.za. Authors will be advised of the acceptance of their paper by 31 March. The final written paper will be requited by 30 April and PowerPoint presentation by 15 May. Please also include a short CV and a photograph of your self.

Registration for the symposium will open on 1 February. Follow details of www.amsatsa.org.za.

[ANS thanks SARL News for Sunday, December 29, 2013 for the above information]

OPDX Interview With ND9M.VQ9JC Diego Garcia

(Here is an interview from the Ohio/Penn DX Bulletin with Jim Clary, ND9M, known for his amateur radio and amateur satellite operation from Diego Garcia, and maritime mobile operation. - ANS Ed.)

VQ9, CHAGOS (Update). Last week we reported that Jim, ND9M, is once again active as VQ9JC from Diego Garcia. Jim informed OPDX that he arrived on the island a month ago, but he had to get his license renewed; it expired a couple days before he landed.

Jim states, "Normally, I get it renewed within one business day, but this time there was an administrative hiccup that led to a month-long delay. The British military officer in charge of the island - called the 'Brit Rep' - was new to his post here. He read all the can's and cannot's of the job, and the legal info about issuing ham licenses says that tickets are signed by the Territorial Commissioner who's back in the U.K.

The Brit Rep finally got the official word last week that issuing authority was delegated to the local office, and my license was signed the next day. This was the first time in the 15 years I've been coming here that anything like that had happened. In fact, licensing had been so smooth here that in 2008, I walked in to the Brit Rep's office without an appointment and left 45 minutes later with not only a signed renewal for my regular VQ9JC license but also a special temporary license for my VQ98JC operation. I wonder if anyone else can claim receiving two licenses fully authorized with-out previous notice that fast!

Anyway, I'm still operating Field Day style from the covered picnic table at the park which has AC power and dozens of gecko lizards chasing the bugs. The table is about 30 feet from the wall of the jungle, and this weekend I'll try to thread a 135-foot OCF dipole through all the trees in the jungle so that I can not only leave

the antenna up but also have multi-band capability. If I hoist the antenna where it can be seen, I would stand a very good chance of it being quickly removed as the 150 pound fishing line that I use to secure the antenna and the copper wire are both precious commodities here.

The OCF dipole doesn't work on 15m, 30m, or 60m, even with a matchbox, so I'll put up separate dipoles for 15 and 30 and feed those two and the OCF to a switch. I don't know yet if I'll put up a 60m dipole. The 80m OCF is going to be a big enough project just to get it hoisted to only 25 feet; the jungle's pretty thick! I'll also be putting up a 20m dipole and maybe a 30m dipole as well on the ship. Obviously, I sign /MM during any contacts made from the ship as I did earlier this year. Contacts with me as /MM aren't valid for DXCC of course, but SKCC ops can count them if my ship's QTH is near the island.

The rig is an FT-857D. I'll be running 100 watts most of the time, but I'm expecting to do some QRP work from here too. Most of my operating will be CW as usual (with a cootie most times), but I'll be on SSB occasionally. Also, I'm a rookie when it comes to digital comms, but I'm hoping to get my Rigblaster and FLDigi software configured to do some PSK and RTTY work.

While on board the ship, I use an Icom IC-760 that I have set up in my service shop. I feed the coax through a helicopter control center that's directly above my shop. My shipboard antennas are about 115 feet above the water line. I don't have internet connectivity when I'm at my operating QTH on the island, so I obviously can't help with real-time QSY requests or the ever present 'EU PSE' when I'm calling for NA & SA stations."

OPDX asked Jim about the status of the club station, possibly using a special VQ prefix for 2014, activity on the satellites and if he would attend the 2014 Dayton HamVention, and he replied, "Yeah, the ham club station is gone forever unfortunately. The log periodic has been grounded and dismantled, and everything in the shack has been turned back over to the Navy. I'm here six months out of the year of course, but once Larry, VQ9LA left three years ago, there was no one reliably present during my off times. When the Navy's MWR office personnel made a routine visit, they found nobody there since I was Stateside, so they decided that the club was no longer in use and took what they thought were appropriate steps. By the time I got back to the island and worked my way up the chain of command, the deal had been sealed.

And yes, I'm working the satellites out here although there aren't many ops to work. I'll be on the birds when I get home again next year.

I don't know yet if my XYL Cori (KK4CGA) and I will be at Dayton this coming May or not. We're hoping to go to New England for the ARRL Centennial in July, and we'll likely do only one trip. My assignment schedule has me returning to the ship a few days before the national convention, and I'm trying to work things out with the guy that's here when I'm off ship for him to stay a little longer so that I can attend. He hasn't given me a firm answer yet though.

My plan for 2014 is to get VQ94JC issued for sometime during the second half of the year. The local licensing office has no requirements toward my getting a ticket other than having one already issued by the FCC. My US license expires in April, and the FCC won't enable the renewing process until 90 days before the expir-

ation date, so I have to wait until early January to do that. If I can get the renewed license here - actually just a scanned copy will do and my XYL will send that - I can turn that over to the local office, and they should issue me the short-term ticket. Emphasis on special. It's all legal of course, but the folks in that office are all British military who typically do one-year tours here before being re-assigned, so I can never assume that the next person will cooperate. I'm optimistic though as I've already had 7 VQ9xJC licenses plus the VQ975FOC ticket earlier this year, so the precedent's pretty well established. When I started doing the VQ9xJC bit in 2007, I did it just for fun and I thought the WPX chasers would like it. I really didn't expect to still be doing it after so many years. Now I'm looking ahead at rounding out the decade of annual special callsigns and thinking about what special prefix variation to initiate after the 10th one!" QSL via ND9M.

[ANS thanks Ohio/Penn DX Bulletin No. 1143 for the above information]

AMSAT Representatives Requested for Vienna Wireless Society Hamfest

Jack Welch, coordinator for the Vienna Wireless Society Hamfest, in Northern Virginia is seeking AMSAT-related representatives, who would like to either do a classroom presentation or a parking lot demo during their winterfest this February. The event is on Feb 23rd in Annadale, VA. It will be held at the Northern Virginia Community College. They have a classroom and seminar room available for 30-60 minute presentations. Also available are parking lots, some for parking, some for tailgating, that have a pretty good view of the horizon for demos.

If you are available to help pleae contact AMSAT Director-Field Operations, Patrick Stoddard, WE9EWK, at wd9ewk(a)amsat.org or Jack Welch, AI4SV, dhakajack at gmail dot com

Our hamfest info is at: http://www.viennawireless.org/winterfest.php

[ANS thanks Jack Welch AI4SV for the above information]

ARISS News

Uncoming ARISS contact with Zespel Szkel Technicznych, Ostriw Wielkopolski, Poland

An International Space Station school contact has been planned with participants at Zesp?l Szk?l Technicznych, Ostr?w Wielkopolski, Poland on 08 Jan. The event is scheduled to begin at approximately 10:43 UTC. The duration of the contact is approximately 9 minutes and 30 seconds. The contact will be direct between OR4ISS and SP3POW. The contact should be audible over Poland and adjacent areas. Interested parties are invited to listen in on the 145.80 MHz downlink. The contact is expected to be conducted in English.

The Centre of Technical Schools in Ostrew Wielkopolski is a school which educates future electronics and mechatronics engineers, computer scientists and renewable energy specialists. Our school has been cooperating with Polish universities, electronic and mechatronic

industrial plants and schools in Germany and the UK, what brings very good results. Thanks to the participation in the ARISS program our school has partnered with the Space Research Centre of the Polish Academy of Sciences in Warsaw. Our students participate in various forms of extra-curricular activities which develop their passions and interests. As a result, they have created many interesting electronic and mechatronic devices. For example, some of the recent constructions include fpv plane, a qudrocopter, a stratospheric balloon capsule, some amateur radio equipment and many more.

Currently, the school has 800 students aged 16 - 19 years. The Center of Technical Schools has invited its younger mates (students 13 - 15 years old) from Junior High School No. 1 named of Polish Nobel laureates in Ostr?w Wielkopolski and 10 - 12 year-old students from Pope John Paul II Primary School in Lamki so that they all can participate in the ARISS program. Preparations for the ARISS contact began in late 2011. A series of amateur radio classes were carried out so that students could learn the rules of work on the radio. It was a very interesting experience to carry out radio communications through amateur radio satellites and to take photos from NOAA satellites. In addition, we monitored other radio signals from the space. Most emotions were from the radio contact with the ISS in the APRS system and from listening to ARISS contacts of other schools in Poland and Europe.

The schools participating in the ARISS program organized a series of events to promote various fields of science, particularly those that are the most relevant for the development of astronautics.

Participants will ask as many of the following questions as time allows:
1. What scientific experiments are carried out on the space station at present?
2. How does the magnetic needle work in space?
3. How do you handle different illnesses?
4. How would a pendulum clock work on board of the ISS?
5. Was there anything that surprised or impressed you during your stay in space?
6. What was the largest mammal (except for humans) which was on the ISS?
7. How do flying insects behave in zero gravity?
8. Do you know how many centimeters your body lengthened in weightlessness?
9. Is it easy to use a pen or a fountain pen on the space station?
10. Do you think that time in space passes faster?
11. How do you observe and explore the Moon?
12. What or how did you feel when you saw the Earth from space for the first time?
13. Does Kirobo work well and fulfill its mission on the ISS?
14. Is it hard to get used to weightlessness?
15. Is it possible to be able to breed crystals in weightlessness?

PLEASE CHECK THE FOLLOWING FOR MORE INFORMATION ON ARISS UPDATES:

Sign up for the SAREX maillist at
http://www.amsat.org/mailman/listinfo/sarex

Visit ARISS on Facebook. We can be found at Amateur Radio on the International Space Station (ARISS).

To receive our Twitter updates, follow @ARISS_status

Next planned event(s):

1. Berkeley Middle School, Williamsburg, VA, direct via K4RC

Wed, 08Jan2014, 18:33 UTC

ARISS is an international educational outreach program partnering the participating space agencies, NASA, Russian Space Agency, ESA, CNES, JAXA, and CSA, with the AMSAT and IARU organizations from participating countries.

ARISS offers an opportunity for students to experience the excitement of Amateur Radio by talking directly with crewmembers on-board the International Space Station. Teachers, parents and communities see, first hand, how Amateur Radio and crewmembers on ISS can energize youngsters' interest in science, technology, and learning. Further information on the ARISS program is available on the website http://www.ariss.org/ (graciously hosted by the Radio Amateurs of Canada).

[ANS thanks David, AA4KN for the above update]

Satellite Shorts from all over

SkyCube 2meter highly reflective balloon

The empty gray box shown at the top of the satellite model is the container that holds SkyCube's balloon. We will command the ballon to inflate 90 days into the mission.
Most CubeSats are far too small to see from the ground, but SkyCube will be an exception. The satellite will carry a tightly-packed balloon, made of 0.35-mil (9 µm) low-density polyethylene, coated with highly reflective titanium dioxide (TiO2) powder. During the final phase of the mission, the balloon will be inflated with a 4-gram CO2 cartridge, and expand to a diameter of nearly 7 feet (2 m). This will make SkyCube brightly visible to millions of people on the ground as it passes over the Earth's twilight regions.
SkyCube's balloon serves another purpose. Once it inflates, SkyCube's orbit will decay rapidly due to atmospheric drag. Less than two weeks after balloon inflation, SkyCube will re-enter the Earth's atmosphere and burn up harmlessly. The balloon lets SkyCube end its mission cleanly, and avoid becoming space debris that could harmfully impact future missions. SkyCube's balloon was developed by Global Western, an experienced supplier of aerostats for NASA, JPL, and others with unique high-altitude ballooning needs.
Further details are available in SkyCube's Orbital Debris Assesment Report (ODAR), required by NASA and approved with our FCC license, above.

[ANS thanks Kevin Fetter and the Seesat-l mailing list for the above short]

2M Scotland

Listen for Paul Robinson, 2E1EUB/2M1EUB/P operating portable from Scotland beginning on 4 January for 7 days. Paul plans to be active on the satellites via AO7, AO73, VO52, FO29 and SO50. His operations will be from his van, holiday style. Paul says that on this trip he will only be in NE Scotland this time.

[ANS thanks Paul, 2E1EUB/2M1EUB/Pfor the above short]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org